



Erasmus Universiteit Rotterdam

**The 1st Erasmus Smart Port  
Rotterdam/Port Research Centre  
Poster session  
Rotterdam, March 6 2012**

**Erasmus Smart Port Rotterdam**

**TU Delft**

**ERASMUS UNIVERSITEIT ROTTERDAM**

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## Coping with corridors: the case of Code-24

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### Curriculum Vitae

My name is Patrick Witte, I am 23 years of age and I am presently living in Zeist, together with my fiancée, Lisan. I am currently working on my dissertation, being in my second year as a PhD-student in the Department of Human Geography and Planning, Faculty of Geosciences, Utrecht University. In the same department, I have both obtained my Bachelor's Degree in Human Geography and Urban & Regional Planning (2009), including the participation in and completion of the Honours College Geosciences, and my Master's Degree in Urban & Regional Planning (2010), cum laude. During the process of writing up my Master's Thesis, on the topic 'The costs and benefits of land development', I have completed an internship at the PBL Netherlands Environmental Assessment Agency. My research interests include land use planning and -policy, transportation planning, strategic planning and complex planning problems. Personal interests which make my clock tick include, among the many, Christianity, planning my forthcoming wedding together with my fiancée, long distance running, long distance walking, cycle racing, travelling, writing, reading, listening to music, watching movies and TV-series, and sports.

### Relevance of my research

My PhD-research is part of an EU-funded INTERREG-IVB research project, called 'Code 24', on corridor development of the Rotterdam-Genoa transportation axis. In this research project, many public and private stakeholders have been involved. Amongst them are port authorities (Port of Rotterdam Authority, Genoa Port Authority), regional public institutions (Rhein-Neckar, Ruhr, Karlsruhe, Frankfurt/Rhein-Main, Mannheim), universities (Universität Duisburg-Essen, ETH Zürich, Hochschule Kehl, Utrecht University) and (private) research institutes (Uniontrasporti, SiTI, TransCare, PTV).

On a broad level of analysis, one can state that the economic potential of this 'Corridor 24' is of relevance to society at large. Examples include the associated economic benefits of knowledge spill-over occurring on this corridor, the nature and effects of infrastructure investments, negative external spatial and environmental effects resulting from transport bottlenecks, etc. It is because of the complexity of these issues that so many different partners are involved in this project.

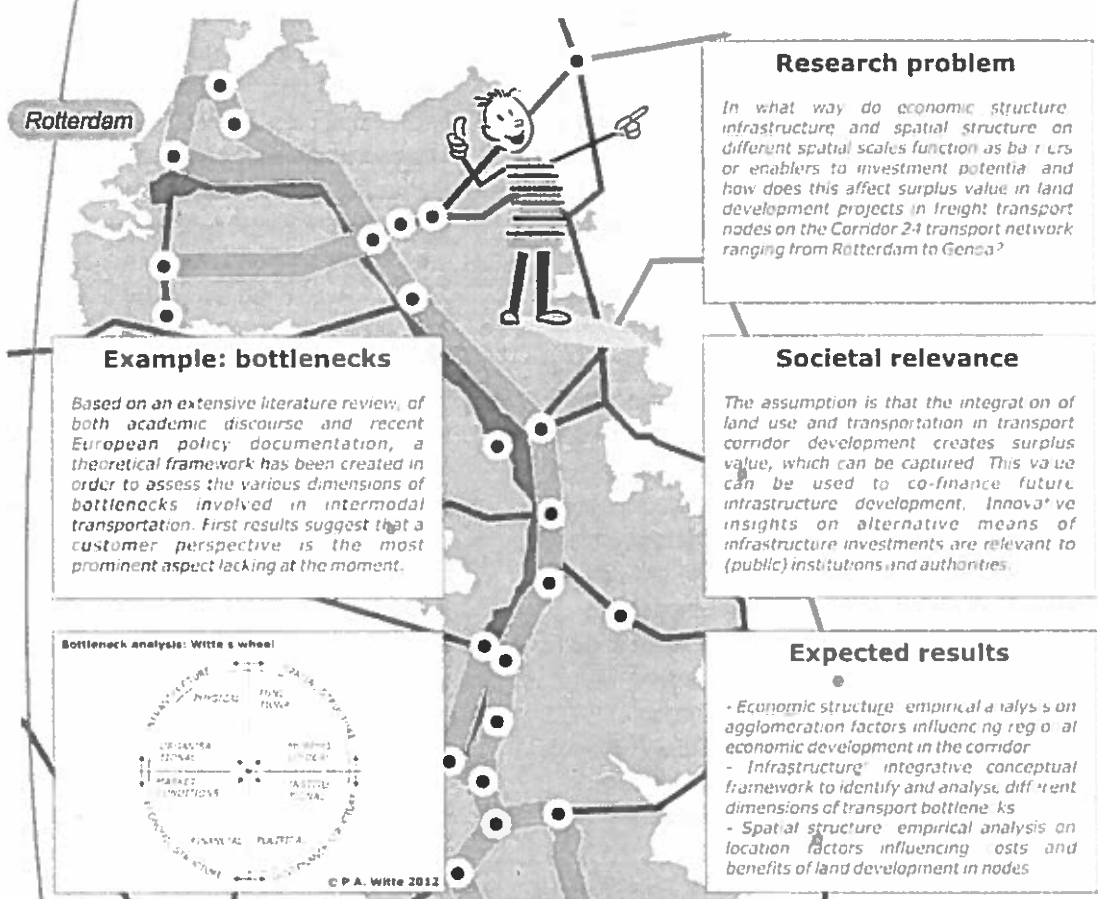
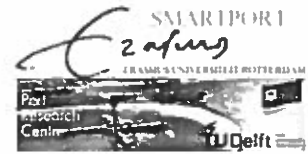
I also believe that my PhD-thesis is of relevance to society at large and to the partners in the project. My PhD-thesis aims to identify and analyse different barriers and enablers involved in capturing surplus value in intermodal freight transport nodes on European transport corridors. In other words, my PhD-thesis adds to the understanding of the influence of economic structure, infrastructure and spatial structure on the investment potential of transport corridors. I would argue that, especially since the recent global financial and economic crises, innovative insights on alternative means of infrastructure investments are relevant to (public) institutions such as the Port of Rotterdam Authority.

### Broader research theme related to my PhD-research

The project Code 24 intends the interconnection of economic development, spatial, transport and ecological planning along the trans-European railway axis (TEN-T) no. 24 from Rotterdam to Genoa. Corridor 24 covers a number of the most important economic regions in Europe. The major European north-south transport axis across the Netherlands, Germany, Switzerland and Italy is linking the North Sea port of Rotterdam and the Mediterranean port of Genoa. Its catchment area comprises 70 million inhabitants and operates 50% (700 million tons/year) of the north-south rail freight.



Universiteit Utrecht



**Research problem**

*In what way do economic structure, infrastructure and spatial structure on different spatial scales function as barriers or enablers to investment potential and how does this affect surplus value in land development projects in freight transport nodes on the Corridor 24 transport network ranging from Rotterdam to Genova?*

**Societal relevance**

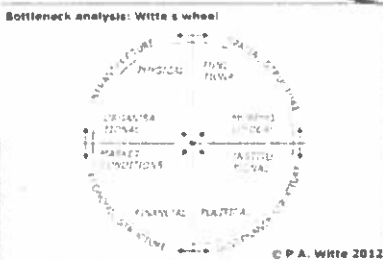
*The assumption is that the integration of land use and transportation in transport corridor development creates surplus value, which can be captured. This value can be used to co-finance future infrastructure development. Innovative insights on alternative means of infrastructure investments are relevant to (public) institutions and authorities.*

**Expected results**

- Economic structure: empirical analysis on agglomeration factors influencing regional economic development in the corridor
- Infrastructure: integrative conceptual framework to identify and analyse different dimensions of transport bottlenecks
- Spatial structure: empirical analysis on location factors influencing costs and benefits of land development in nodes

**Example: bottlenecks**

*Based on an extensive literature review, of both academic discourse and recent European policy documentation, a theoretical framework has been created in order to assess the various dimensions of bottlenecks involved in intermodal transportation. First results suggest that a customer perspective is the most prominent aspect lacking at the moment.*



ERASMUS SMART PORT ROTTERDAM / PORT RESEARCH CENTRE

**COPING WITH CORRIDORS:  
THE CASE OF CODE-24**



FIRST POSTER SESSION MARCH 6, 2012

One Corridor, One Strategy  
[www.code-24.eu](http://www.code-24.eu)

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The opening of the Lötschberg Tunnel in 2007 and the Gotthard Tunnel (expected in 2017) and the parallel expansion of the feeders will further improve the importance of Corridor 24. Nevertheless, some major bottlenecks and a lack of trans-regional coordination still threaten the potential of the axis, limiting its economic and spatial development.

Code 24 aims at a coordinated transnational strategy to support the improvement and the development of the corridor. The overall objective is to accelerate and jointly develop the transport capacity of the entire corridor by ensuring optimal economic benefits and spatial integration while reducing negative impacts on the environment at local and regional level. By focussing on regional aspects in the corridor area and joint development strategies, the project will strengthen the position of regional actors and stakeholders. It will provide planning tools and tailor made solutions to remove major bottlenecks and enable pro-active stakeholder participation. This encompasses both: the development of the railway system as well as a sustainable spatial development. Code 24 was approved under the Strategic Initiatives Framework of the INTERREG IVB NWE programme (information obtained from project website: <http://www.code-24.eu>).

#### **PhD-research topic**

The research problem of my PhD-research is that the spatial component is mostly absent in research on transport corridors and that transport problems are dealt with in isolation of land use. The assumption is that the integration of land use and transportation creates an added value, which can be captured. Improving the transport provisions in a transport node will, because of improved accessibility, create favourable conditions for land use activities, which will lead to surplus value in related property development. This supposed relation provides an argument to get private property developers to finance part of the infrastructure costs. This practise is called 'value capturing' and has already been applied to public transport nodes.

The goal of my PhD-research is to clarify under what conditions the practise of value

capturing can be applied to freight transport nodes, to contribute to developing European transport corridors. To this end, first, the economic investment potential of transport corridors is assessed. Then, the bottlenecks and measures for future improvement are formulated from both a transport and a planning perspective. Finally, the practise of value capturing at freight transport nodes will be explored in more detail. The captured surplus value can be used to invest in the transport infrastructure of the transport nodes, to positively contribute to the future performance of the entire transport corridor.

The approach and research methods used in my PhD-research differ for each individual 'pillar' of my PhD-thesis. First, to fill the hiatus of knowledge on the economic potential of transport corridors, a quantitative, empirical analysis on the factors influencing the economic development potential of regions interested by transport corridors will be carried out. Regression modelling using a unique dataset of 227 European NUTS-2 regions will be supplemented by performing spatial regime analyses on at least three distinct European transport corridors, to test for the occurrence of agglomeration externalities both inside and outside the corridors. First results suggest that regions within European transport corridors grow faster in employment, being embedded in a diverse economic environment, compared to other European regions.

Second, attention will turn to an integrative analysis of bottlenecks in intermodal freight transportation. Based on an extensive literature review, of both academic discourse and recent European policy documentation, a theoretical framework has been created in order to assess the various dimensions of bottlenecks involved in intermodal transportation. This theoretical framework can be tested in an empirical setting in case studies on the transport corridor Rotterdam-Genoa, using mixed scanning methodology. First results show that a customer perspective, which stresses to perceive bottlenecks from the perspective of logistics service companies, is the most prominent aspect lacking in the present understanding of bottlenecks.

Finally, this PhD-research will stress the importance of involving the spatial dimension in transportation planning. In specific, this part of the PhD-research will focus on the location features to be taken into account for value capturing to succeed. Value capturing will only succeed if there is sufficient surplus value, in other words, when there is a healthy balance of costs and benefits in land development. This part of the PhD-research therefore reports on the results of a project in which multivariate regression analyses have been carried out to estimate the relative value of location features (previous land use, land use zoning, etc.) to the costs and benefits of land development. First results show that much of the variance in costs and benefits can be explained through these basic location features.

Up to now, I have not published any scientific publications related to my PhD-research. However, I did publish a professional publication and present at a conference on the topic of

'The costs and benefits of land development'. Besides, I finished another professional publication on 'Bottlenecks in intermodal freight transport', which is to be published in May, 2012. My plans for 2012 are to finish at least three scientific publications, related to the different 'pillars' described before (economic structure, infrastructure, spatial structure), and to present my results at any convenient occasion.

In the final year of my PhD-research, in 2013, I will focus on the final aspect of my topic, that is, integrating the different perspectives (economic, transport, spatial) in one coherent analysis of the possibilities of value capturing at specific, nodal points of the Rotterdam-Genoa transport corridor. This will hopefully provide me with the content to finish a final publication, before writing up my entire dissertation. I aim to finish my PhD-research before the end of 2013.